Record 1 of 2

Patent Number(s): EP856714-A; EP856714-A2; DE19703681-A1

Title: Method of removing condensable components from gases and gas mixtures - involves contacting gas with coolant via indirect heat exchange using heat exchange surfaces which alternately do and do not contact coolant

Inventor Name(s): HENINGER R

Patent Assignee(s): LINDE AG (LINM)

Derwent Prim. Accn. No.: 1998-401010

Abstract: The method involves contacting the gas with a coolant via indirect heat exchange. One heat exchanger surface (4) contacts the coolant and another does not. The gas is in heat exchange with both.

Preferably the coolant and gas counterflow, and the contact of the heat exchanger surfaces with the coolant operates alternately in cycles. The time of these cycles is sufficient for the condensed substances to be melted from the heat exchanger surface by contact with the gas and/or gas mixture.

ADVANTAGE - Enables continuous operation over long periods.

Equivalent Abstracts: (DE19703681-A1) The method involves contacting the gas with a coolant via indirect heat exchange. One heat exchanger surface (4) contacts the coolant and another does not. The gas is in heat exchange with both.

Preferably the coolant and gas counterflow, and the contact of the heat exchanger surfaces with the coolant operates alternately in cycles. The time of these cycles is sufficient for the condensed substances to be melted from the heat exchanger surface by contact with the gas and/or gas mixture.

ADVANTAGE - Enables continuous operation over long periods.

IPC: F25J-003/06

Priority Applic. Info and Date:
DE1003681 31 Jan 1997

Designated States:
EP856714-A2:
(Regional): AL; LU; LT; LI; IT; IE; GR; GB; FR; SI; SE; RO; PT; NL; MK; MC; LV; CH; DE; DK; FI; ES; BE; AT

Record 2 of 2

Patent Number(s): EP553706-A; EP553706-A1; DE4202802-A1; AU9331940-A; CA2087996-A; JP6304435-A; US5415224-A

Title: Assembly for cooling and drying compressed air without risk of ice formation - comprises heat exchanger contg. cooling channel and dryer forming single unit

Inventor Name(s): SEILER W; KOCH B; SELLER W

Patent Assignee(s): SEILER W (SEIL-Individual); KOCH B (KOCH-Individual); SELLER W (SELL-Individual)

Derwent Prim. Accn. No.: 1993-244700

Abstract: An assembly to cool-dry or cool-liquefy gases incorporates a heat exchanger through which flows a cooling channel to condense vapours in the surrounding gas, which then form frost, ice or liquefy. The novelty is that the heat exchanger and the drier comprise a single unit in which the condensation, the frost or ice condensate and/or the fluid are removed separately from the gas flow.

The assembly contains at least two heat exchanger sections which separately retain their respective condensate. At least one section can be cooled to less than zero centigrade. At least one section cools the gas to below its condensation point at the then current gas pressure. Condensate or ice condensate is removed separately from liquid gas. The cooling effect is achieved by gas depressurisation after the primary heat exchanger, followed by a contra flow. The cooling is controlled by the degree of depressurisation after the primary heat exchanger.

USE/ADVANTAGE - The assembly cools and dries gases, esp. pressurised air. The arrangement provides a simple device by which gases can be cooled and dried without risk of ice formation.

Equivalent Abstracts: (DE4202802-A1) Assembly to cool-dry or cool-liquefy gases incorporates a heat exchanger through which flows a cooling channel to condense vapours in the surrounding gas, which then form frost, ice or liquefy.Heat exchanger and the drier comprise a single unit in which the condensn., the frost or ice condensate and/or the fluid are removed separately from the gas flow.

The assembly contains at least two heat exchanger sections which separately retain their respective condensate. At least one section can be cooled to less than zero centigrade. At least one section cools the gas to below its condensn. point at the then current gas pressure. Condensate or ice condensate is removed separately from liq. gas. The cooling effect is achieved by gas depressurisation after the primary heat exchanger, followed by a contra flow. The cooling is controlled by the degree of depressurisation after the primary heat exchanger.

USE/ADVANTAGE - The assembly cools and dries gases, esp. pressurised air. The arrangement provides a simple device by which gases can be cooled and dried without risk of ice formation.

(US5415224-A) A dry gas cooling effect is obtd in a heat exchanger (100,120) for freezing out vapours in the gas. The heat exchanger has gas inlet (160) and outlet (180) means and a concentric internal coolant medium pipe (12). The exchanger has first (100) and second (120) zones above and below the freezing pt of the vapour resp with the cooling medium running counterflow.

Gas cooling fins (122) first condense the vapour in zone (100) for draining (106,104). Fins in second zone (120) condense more liquid but are large enough to form fine solid condensate that adheres to the fins.

USE/ADVANTAGE - To cold dry gases such as compressed air to ppte vapours. Two stage cooling removes most vapour as liq through drain means reducing solid condensate build up.

IPC: B01D-053/26; F25J-003/08; B01D-005/00; F25J-005/00; F25B-009/10

Priority Applic. Info and Date:

DE4202802 31 Jan 1992

Designated States:
EP553706-A1:
(Regional): AT; CH; DE; ES; FR; GB; IT; LI; NL; SE

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